

We regret that our space does not permit us to make any extracts from the book, but we can assure our readers that they will find in it a vast mass of useful information, compressed into a very small space and in a convenient form for reference. The most recent works, including voyages and travels, appear to have been consulted with advantage, and the extracts from them to have been well and carefully selected.

We hope that in some future edition Mr. Maunder will shorten such articles as that on Man, as the space might be much more advantageously occupied by other subjects.

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PROCEEDINGS OF LEARNED SOCIETIES.

ZOOLOGICAL SOCIETY.

January 25, 1848.—Dr. Gamble in the Chair.

The following paper was read:—

NOTE ON THE CAPTURE OF THE AUROCHS (*Bos Urus*, Bodd). BY  
M. DIMITRI DE DOLMATOFF, MASTER OF THE IMPERIAL FORESTS  
IN THE GOVERNMENT OF GRODNO.

(Communicated by Sir Roderick Murchison.)

Having been appointed, in 1842, Master of the Forests of the Government of Grodno, I have been led, as much by duty as by inclination, to pay particular attention to the forest of Bialowieza, the last asylum of the Bison of Europe, and I have given a description of that primitive forest and of its interesting inhabitant, both worthy to be numbered amongst those curiosities which our beautiful and im-



mense country presents. My work was favourably received by our government, but subsequently five years of assiduous observations and researches have convinced me that that work is incomplete, and have

excited in me the desire to draw up a treatise on the Bison ; for my own experience embraces curious facts and free from all error.

I have turned my attention particularly to refute by experience the erroneous opinion, accredited by all the writers who have treated on this subject, namely that the calf of the Bison cannot be suckled by our domestic cow. This fable has been repeated even in the work of an esteemed writer of our times, the Baron de Brinvers, who relying upon the recital of another writer, the learned Gilibert, asserts that two female Bison calves, caught in the forest of Bialowieza, seven weeks old, constantly refused the teats of a domestic cow ; that they consented, indeed, to suck a goat, but as soon as they had had enough, they repelled their nurse with disdain, and grew furious whenever they were put to a domestic cow. M. de Brinvers had not himself the possibility of verifying this fact ; and he cites traditions, communicated to him by the old inhabitants of the environs ; for if any one of the forest guards, or the peasants who inhabit the forest, had even met a Bison calf, parted by any accident from its mother, he would rather have left it, than seized and nursed it, in contravention of the severe law, which prohibits the capture or killing of a Bison. It was therefore only the supreme order of His Majesty the Emperor, emanating from the desire expressed by Her Majesty Queen Victoria to possess in her Zoological Garden two living Bisons, which has enabled me to rectify the error above mentioned. For as many attempts had already proved, that Bisons captured full-grown and in their wild state could never bear the captivity and especially the transport, and would infallibly perish, I proposed to catch two young calves, and to suckle them at the houses of the forest guards. His Excellence the Minister of the Domains of the Empire, Comte de Kisseleff, having approved of this project, and ordered it to be put in execution, I went without delay to the forest of Bialowieza. It was the 20th of July, 1846, at daybreak, and assisted by 300 beaters and 80 keepers of that forest, armed with fowling-pieces, charged only with powder, that we set out on the trace of a troop of Bisons explored during the night.

The day was superb and the sky serene ; there was not a breath of wind, and nothing interrupted the calm of nature, so imposing under the majestic dome of the primitive forest. . . . The 300 beaters, aided by 50 keepers, had surrounded in the most profound silence the solitary valley in which were the troop of Bisons. Accompanied by 30 keepers of determination and merit, we penetrated, step by step, into the surrounded enclosure, advancing with the greatest caution, and, so to speak, holding our breath. Arrived at the limit which bordered the valley, we enjoyed one of the most interesting pictures ! The troop of Bisons was lying down on the slope of a hill, ruminating, in the most perfect security, whilst the calves gamboled around the troop, amused themselves with attacking one another, striking the ground with their agile feet, and throwing up the sand into the air : then they ran off to their respective mothers, rubbed themselves against them, licked them, and then returned to their gambols. But at the first sound of the horn the picture changed in the twinkling of an eye ! The troop, as if struck by a magic wand,



jumped on their feet, and seemed to concentrate all their faculties in two senses, hearing and sight. The calves pressed timidly against their mothers. Then, when the noise of the hounds resounded, the Bisons hastened to range themselves in the order which they usually take in similar circumstances, namely, placing their calves in front they form the rear-guard, to protect them from the pursuit of the dogs, and advance. Arrived at the line occupied by the beaters and the keepers, they were received with piercing cries and firing of guns. They then changed the order of defence; the old Bisons rushed with fury on one side, broke the line of chase, and continued their course victoriously, bounding along, and disdainingly to trouble themselves about their enemies who were crouching against the enormous trees. The keepers however succeeded in detaching two calves from the troop: one, aged 3 months, was taken at once; the other of 15 months, though seized by eight persons overthrew them and fled. The dogs were set in pursuit, and the Bison, forced into a marsh, was bound and carried to the court-yard of the forester. Four Bison calves, 1 male and 3 females, were taken in other places in the forest. One of these females, aged only a few days, was suckled at first by a domestic cow, of a fawn colour similar to that of the Bison, and, to the surprise of every one, the cow manifested a tender attachment for this adopted wild and bearded young one. Unfortunately the young animal died six days afterwards, suffocated by a swelling in the neck, which it had before it was caught, and which was continually increasing. The other calves took no food the first day of their captivity; but on the following day, the one aged 3 months began to suck a cow and seemed gay and lively. Its companions in captivity, excepting the one 15 months old, began at first to take milk from a man's hand, then they drank from a pail with great avidity, and when the pail was empty they licked one another's muzzles. In a short time they lost their wild look, and their timidity changed into an extreme vivacity and petulance. When let out of their stable, into the large court-yard of the farm, the rapidity of their movements, their agility, and the lightness of their leaps, similar to those of the goat or stag, astonished every one. They played with the calves of the domestic cows of their own accord, combated with them, and although stronger, they appeared to yield to them from generosity. The male Bison of 15 months for a long time preserved his wild and stern look; he was irritated at the approach of any one, shook his head, lashed his tail, and presented his horns. After two months of captivity he was at length tamed, and attached himself to the peasant who fed him; and then more liberty was given him. The Bisons are in general fond of striking the ground with their feet, throwing the earth into the air, and then rearing as horses do. They exhibit much attachment to the person who feeds and looks after them, come and rub themselves against him, licking his hands, and obeying his voice; they run bounding up when he calls them. Whenever they were let out of the stable, they grew animated, raised their head proudly, dilated their nostrils, snorted with force, and gave themselves up to all kinds of sports; but soon perceiving that

they were shut up, they turned their looks now toward the immense forest, then toward the carpet of verdure spread out before them in the distance; they seemed to recollect their wild liberty, and lowering their head they returned into their stable with an inexpressible sadness.

Six Bison calves, taken last year during the chase which I have just described, were brought up in two places, at some distance from one another. The two males caught during the first chase suffered nothing from the new food which was offered them; the others, which drank the milk instead of sucking it, had diarrhœa for a week. But it is probable that this complaint arose from the milk, with which they were fed, being brought from some distance, and becoming sour on the transport; for as soon as two cows were procured for each Bison, and they received fresh and lukewarm milk, the complaint ceased. The two first became accustomed also to lick salt, whilst the others never touched it. As for the young Bison, aged 15 months, he would not take milk, and began from the first day to eat oats mixed with chopped straw, hay from the forest and the meadows, the bark and leaves of the ash, the wild pear, the hornbeam, the aspen and other young shrubs. The same food served for the other young Bisons, when milk was no longer given them. They drink spring and river water indifferently, and take more and oftener in the day during the summer. The young calves refused at first to quench their thirst with pure water, and it was necessary to whiten the water with a little milk. Hunger and thirst make them utter a kind of grunt similar to that of the pig. Abundant and varied food, a stable which in winter protected them against the cold and in summer against insects, had a remarkable influence on the growth of the young Bison; so much so, that a young female, captured in January of this year, and intended to supply the place of one which died, was found to be only half as large as its companions of the same age taken last year and brought up by man's care. And as history tells us of bisons being killed of enormous size, and that in their wild state they are of different shapes, it would be interesting to ascertain what dimensions a Bison might attain, tamed, fed, and brought up by man; especially in England, where the art of rearing domestic animals is carried to the highest degree of perfection. Another still more important experiment would be to attempt to couple a Bison bull with a domestic cow; and I am led to think the thing possible from the inclination manifested by the young Bison bull taken last year, and now aged 2 years and 3 months, towards the female calf. Perhaps a new crossed race of cattle might thus be obtained, which, uniting extraordinary strength and agility with docility and attachment to man, might become of great utility to him. Lastly, taking into consideration that one pair of young tamed Bisons is destined for London, the second for St. Petersburg, and the third to remain here, on their natal soil, it would be no less interesting to communicate reciprocally and at proper times the comparative observations which shall have been made on the climatal influence exercised on these animals in the different regions whither they shall be transplanted.



The tamed Bisons carried from Bialowieza to Grodno have just made by land a journey of 140 versts (20 German leagues). The pair destined for St. Petersburg was shut up in an oblong cage, covered with straw, divided into two compartments, so that the Bisons could lie down without turning away from one another. This new prison and the jolting of the carriage had a painful effect on the spirit of the Bisons, and although tranquil and resigned, they took no food, and would not lie down for the first twenty-four hours; but the second day they became calm and returned to their old habits. The journey lasted three days.

The male and female destined for London travelled in a much more spacious and uncovered cage. The male was very restless during the whole journey, struggled incessantly, made a roaring similar to the bellowing of the bull, and wounded himself in the eye in attempting to leap over the bar of the cage, two toises high. Of the age now of 15 months, the male is 4 feet 1 inch in height and 5 feet 6 inches long; the female is 4 feet high, and 5 feet 3 inches long.

At Grodno the Bisons are placed in a spacious stable, and each pair is separated from the other. At first, on attempting to put them together, they fell to fighting desperately, so much so that they even knocked down the solid partition which separated them; they began by all attacking one another, and then, which is a singular fact, the three male Bisons fell upon the only female within their reach, and would infallibly have killed her, if the keepers had not defended her. Subsequently they became accustomed to one another, and the combats ceased.

It would be necessary, in my opinion, to keep the Bisons in a spacious park, where they would be able to live at their ease; and as they detest brilliant colours, and red especially enrages them, their keepers ought to wear clothes of a dark colour. I should also mention that they dislike dogs, and grow furious when pursued by them.

DIMITRI DE DOLMATOFF,

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#### BOTANICAL SOCIETY OF EDINBURGH.

Jan. 11, 1849.—Professor Balfour, President, in the Chair.

The following communications were read:—

1. "A short Notice of Berwickshire Plants," by James Hardy, Esq. In this communication Mr. Hardy first alluded to the vegetation of the coast between Cockburnspath and the mouth of the Peaseburn; the chief plants of importance being *Glaucium luteum*, *Astragalus glycyphyllos*, *Blysmus rufus*, *Carex extensa* and *Ligusticum scoticum*. The oyster-plant (*Steenhammera* [or *Stenhammaria* as it ought to be spelt] *maritima*) used to grow on that shore, but it has now disappeared, although it still grows abundantly two miles east from the Pease Dean.

This Dean has little to recommend it botanically, but its scenery is very interesting. One of the best botanical localities in the district